

Warfarin Timing

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Improved Timing of Warfarin Administration and PT and INR Testing Post-Dose in Atrial Fibrillation Patients

Roxanne LeRoy, RN

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Rat Poison





The Race Begins

- Questions regarding warfarin
 - Timing of warfarin and lab draws
 - Venous blood vs. finger stick (capillary)
- Journal articles on warfarin and POC
- Asked for help!
 - LVHN EBP/NRC Team





Warfarin Research Relay Team

- Principal Investigator & Study Coordinator
- Administrator, EBP & Clinical Excellence
- Nursing Research Specialist
- Unit Director
- Patient Care Specialist
- Patient Care Coordinator
- All Bedside Nurses on unit

Literature Review

Warfarin is the most commonly prescribed oral anticoagulant. It is also one of the top two drugs implicated in serious adverse events as reported by the US FOOD and Drug Administration (FDA).

Therefore, more intense monitoring of the INR needs to be implemented for long term warfarin therapy (Glover & Bajorek, 2008)

Point of Care (POC) Literature Review

POC machines frequently inflate values less than 3 and decrease values less than 4 (Shermock, Streiff, Pinto, Kraus and Pronovost, 2011).

Capillary POC INR results were 24.1% higher result than the lab (venous) value (Rand et al., 2010, p. 101).



A hypothesis is born.....

- Hypothesis 1: Standardized timing of warfarin administration, and PT and INR testing will reduce cost to both patients and LVHN by decreasing patient length of stay (LOS).
- Hypothesis 2: Point of care (POC) testing methodology using capillary samples are an accurate and efficient approach to warfarin dosing.





Relay Team

Multidisciplinary Team

- Health Network Laboratories
- Manager, PI/POCT Services (Health Network Lab)
- Research Participant Protection Office
- Lehigh Valley Health Network Legal Services
- Lehigh Valley Heart Specialist
- Pharmacy Clinical Specialist
- Lehigh Valley Health Studies



Warfarin Study and Control Groups

Study Group

- Warfarin administration at noon (30 minute +/- window)
- The INR value; a POC (capillary) and lab draw (venous) at same time in the am.
- Noon time POC testing

Control Group

- Warfarin administration at time of physician ordering time.
- The INR value obtained in the am with a venous lab draw.



“ I believe that more attention needs to be paid to the importance of research at the Bedside. The bedside nurse is critical in determining important areas where studies do not guide therapy.”

Dr. Ronald S. Freudenberger, M.D.

Chief, Division of Cardiology

Medical Director, Heart and Vascular Center

Professor of Medicine, Penn State College of Medicine



The Finish Line

- Staff nurses engaged in research process
- Findings beneficial to nursing practice
- Accomplishment
- Team collaboration

W-185ab

SUNDAY

9:00 AM - 5:00 PM

Stand Tall: Using Evidence-Based Practice Principles to Optimize Patient Outcomes

MONDAY

12:30 PM - 1:45 PM

Cytochrome p450: Why the Same Medications Do Not Work on Everyone

2:15 PM - 5:15 PM

Withdrawal of Implantable Cardiac Devices: Strategies for Nurses During the Deactivation Process and EOLC for Patients

TUESDAY

12:30 PM - 1:45 PM

Emergence of Antimicrobial-Resistant Organisms in 2011: What's New?

2:15 PM - 3:30 PM

Navigating the Rough Waters of Rapid Change

4:45 PM - 5:30 PM

Case Analysis for Acid/Base and Electrolyte Crises

WEDNESDAY

12:30 PM - 1:45 PM

Help, Clearing the Hurdles of Bedside Nursing Research

2:15 PM - 5:15 PM

Endocrine Emergency: The Zebra

THURSDAY

8:15 AM - 9:00 AM

Reading Between the Lines: Understanding Continuous ECG Monitoring in the ICU

10:00 AM - 11:15 AM

What Happens to Critical Care and Their Patients? Survival in Professional Practice Environments

11:45 AM - 1:00 PM

Two for One Patient: Managing a Pregnant Trauma Patient





Our 3A Race

- Research idea
 - **5/31/08**
- IRB approval
 - **9/10/09**
- First patient enrolled
 - **12/07/09**
- Currently analyzing data
 - **97 Patients in Study**
 - **50 Control Group**
 - **47 Intervention Group**

Summary

- Resources
- Supporting the learning environment
- Enduring over the course of time
Inquiring minds
- Providing
- Enjoying the accomplishment

References

Glover, S. & Bajorek, B. (2008). Exploring point-of-care testing of capillary blood in warfarin management. *Journal of Pharmacy Practice and Research*, 38 (4), 300-304.

Rand, N., Sands, C., Padilla, V., Naraine, K., & Fox, A. (2010). An evaluation of 2 prothrombin time/international normalized ratio point-of-care devices in clinical practice: A comparison to the central laboratory international normalized ratio. *Point of Care: The Journal of Near-Patient Testing & Technology*, 9 (2), 98-101.

Shermock, K., Streiff, M., Pinto, B., Kraus, P., & Pronovost, P. (2011). Novel analysis of clinically relevant diagnostic errors in point-of-care devices. *Journal of Thrombosis and Haemostasis*, 9 (9), 1769-1775.

Questions

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